

NEWS

Geological Society of Minnesota

MINNEAPOLIS, MINNESOTA



FIRST CLASS



Ethel A. Shimek - Editor
2745 Colfax Ave. South
Minneapolis, MN 55408

RETURN REQUESTED



SEPT., OCT. & NOV., 1981

OFFICERS

Pres	Henry Gangle	2925 Sumpter Ave N. Mpls
V. Pres	Dwight Robinson	97 S. Victoria St. Paul
Sec'y	Joy Hutchinson	3232 Woodbridge St. St. Paul
Treas	Elaine Fink	1935 Girard Ave. S. Mpls
Directors	Virginia Baker	5444 Logan Ave S. Mpls
	Dale Johnson	11310 Co. Rd. 15 Plymouth
	Conrad Nelson	900 Centennial Place Mpls.
	Elizabeth Olten	1577 Fulham St. Paul
	Pat Wigton	3349 Pierce St. N.E.Mpls

FINANCIAL REPORT, 1980

INCOME

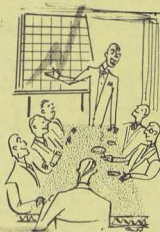
Dues	current year	\$311.00
	following year	408.00
		<u>\$719.00</u>
Coffee		24.51
Miscellaneous		<u>27.74</u>
<u>Total operating income</u>		<u>\$771.25</u>
Interest on savings		<u>226.34</u>
Total income		<u>\$997.49</u>

ASSETS

Cash	\$ 11.51
Checking	119.64
Savings account	129.03
Savings certificate	<u>3,437.49</u>
Total	<u>\$3,697.72</u>
Change in Assets from previous year:	<u>-192.33</u>

EXPENSES

Lecture fees	\$550.00*
Annual programs	111.51
Lab fees	--
Newsletter (incl. postage)	288.71
Membership rosters	63.73
Postage	48.01
Spring banquet	-- *
Bank charges	34.07
Miscellaneous	<u>18.97</u>
<u>Total operating expenses</u>	<u>\$1,115.00</u>
Public service	<u>90.18</u>
Total expenses	<u>\$1,205.18</u>
Operating deficit	<u>\$ 293.75*</u>



*One lecture (\$50.00) was given at the Banquet and was covered by banquet receipts. This amount was excluded from the calculation of operating deficit. Banquet yielded a surplus of \$5.94 which is included in miscellaneous income.

BAD LANDS AND BLACK HILLS

Badlands - Black Hills Field Trip, July 8 - 12, 1981

A welcome cold front blew into the Badlands from the west the day that most of us drove out from Minnesota. Once our tents were set up and supper eaten, many of us attended the nature talk at the nearby amphitheater. Skies were brilliant for views of Saturn, Jupiter's moons, and the Andromeda nebula (by telescope) at the star talk later.

Next morning at 8 AM we "caravanned" off trailing orange ribbons from antennas. Bill Rohrer of Macalester College led our cars a merry chase up through the Cretaceous Pierre shales, the slump-topped Chadron, while the sharply eroded Lower and Upper Brule decorated the skyline. The last 3 formations--called the White River Group--had eroded off the Black Hills in the last 70 million years.

We walked a trail lined with fossils of the Oligocene. The Badlands are a real bone yard of oreodonts, camels, early horses, and giant pigs.

Bill's wife and a history scholar, told us of the humorous dispute between early vertebrate paleontologists Cope and Marsh in the 1860's and 1870's. Her talk on their scientific foibles was the first of several historical vignettes she gave during the trip. Before leaving the Badlands, we also stopped to see clastic dikes and the red-orange mounds of paleo-soils formed in the Pierre shale.

On the way to Rapid City we found several neat fossils of clams, ammonites, along with crystals of gypsum in the Pierre shales along the interstate. Concretions of limestone had formed around decaying organic matter in Cretaceous seas to create these fossils.

The geology museum at the South Dakota School of Mines is a field trip in itself! A grad student was chipping a fossil out of its matrix, bringing an oreodont's skull to light for the first time in 30 million years. We spent an hour at the exhibits taking mental notes, and some of us, written ones. Then, laden with brochures and primed for the Black Hills, we gathered at Dinosaur Park.

There we got a bird's eyeview of the Hills--igneous center, concentric limestone ridges, red beds, Cretaceous cuestas, and the White River Group in the distance. The Black Hills flowers were a bit different from Minnesota's. Alice Bradford brought out one of her numerous flower guides to identify a scarlet globe mallow for me.

Stop by stop we neared the igneous center of the Black Hills. Bill started asking us thought provoking questions, building on what we had learned in previous stops. We went from younger to older rocks. At one stop we saw where Opeche shale, bright red from its 1/10 percent iron content, was overlain by the Mennekahta limestone, laid down underwater. This was evidence that a sea--the Phosphoria--had transgressed into the region.

Still older was the Pahasapa limestone. It suddenly changed from fine crystalline to an angled breccia. Cavities were filled with calcite. It was an ancient cave deposit, and had formed in the mild and rainy Pennsylvanian period, then collapsed.

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MY FIRST FIELD TRIP

I really enjoyed this trip. At first, I wondered if I would have a good time. As the youngest person in the group, I learned a lot about rocks and enjoyed myself. Further, I learned a lot about the history of the Badlands and the Black Hills.

Beside enjoying myself generally, I feel I grew up a lot.

The events that really stick in my mind are: first; the lectures about rocks and fossils: Rocks and fossils are a lot older than I had thought. This fact really impressed me. Also interesting is the way they were formed.

Further the historical aspect of the trip interested me. We learned how the Black Hills and the Badlands were named, and also got a better picture of what it was like in the days of the pioneers.

But it wasn't all learning, there were fun times, too. I was really excited by finding an excellent sample of a fossil that was about 60 million years old. Also I loved seeing Mt. Rushmore for the first time in my life.

Then it was great fun when the whole group went to a fish fry at a restaurant in Hill City. This was also a first for me; and I ate a lot of really great fish.

The really best part of the trip was when we went to a cave. (Wind Cave National Park) The two hour tour and hike was really exciting. Perhaps I liked the cave best because it was both educational and fun.

The only thing I missed was seeing a live rattlesnake. Another result of the trip is that I have turned into a rock hound.

Finally I want to thank everyone in the group for everything.

Martha Holte

The only thing I missed was seeing a live rattlesnake



IN MEMORIAM

Clark Pettengill, president 1962-64, died June 28 following a long illness. He was an adjuster for Fire and Marine Insurance Co. before retirement.

His wife, Orpha, is his only survivor. The Pettengills were long time members of the Society, and had been attending lectures and field trips while his health permitted.

ANNUAL MEETING TO BE AT VIKING VILLAGE

THE ANNUAL MEETING will take place at the Viking Village, 27th Ave. So. and E. Lake Street, Minneapolis, at 7:00 p.m. on Monday, Sept. 28. Those who wish to join other members for dinner should plan to come around 5:30 so that we may proceed promptly.

Two main items will be on the agenda: election of Board Members and two changes in the by-laws. The following have been selected by the Board as candidates for election:

First term: George Johnson and Dick Uthe

Second term: Elaine Fink Henry Gangle and Jay Hutchinson

The following are proposed revisions to the BYLAWS to be presented at the Annual Meeting for adoption:

2. MEMBERSHIP and DUES

The term membership in the Society shall be for one year beginning October 1 and ending September 30. Qualifications for membership shall be:

- A. An interest in the subject of Geology.
- B. Approval by the Board of Directors of the Society.
- C. Payment of dues fixed by said Board of Directors.

The Annual dues shall be:

REGULAR DUES: Husband and Wife \$15; Single \$10; Full time student \$5;

ASSOCIATE DUES: Husband and Wife \$10; Single \$7;

OTHER: Sustaining \$25; Supporting \$50; Guarantor \$100.

Associate membership may be chosen by those unable to participate in the Society's activities because of ill health, location or who are unable to pay the full regular dues.

9. FISCAL YEAR

The Fiscal Year of the Society shall commence October 1 and end September 30.

Nominations may also be made from the floor. Other business may also be considered if germane.

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BLACK HILLS

Cont.

At the end of the first day the motelers drove off to Hill City, the campers to Sheridan Lake in the Black Hills National Forest. Several of us swam. The showers at the lake were the coldest I'd ever taken. Hypothermia threatened to set in midway through supper. Only hot "some-mores" made by Martha Holte and Peg, and the campfire fed by Les Collins and others, restored circulation.

Someone suggested singing "Rock of Ages" since we were a geology group. Instead we sang a few hot numbers from each decade starting with the Civil War. The campers, who included the Rohr's, the Gunville's, Joan Kain, Peg Les Collins, Earl Fore, the Ooten's, Fred Hallberg, Marge McGladery, Conrad Nelson, Virginia and Martha Holte, and myself, then retired to the ponderosa pine grove.

To Be Continued

Editorial

Please note our fall lecture schedule begins Oct. 12. (Schedule is included.)

The board urges members to become involved in committee activities. There are many opportunities to assist on field trips, lecture program planning, exhibits; membership, newsletter, hospitality and public service.

It's a grand way to get better acquainted with some fine folks. Think it over and select an area that interests you. Call Henry Gangl, 545-3912.

CREDITS

Art Jim Erickson; Contributors Martha Holte, Jay Hutchinson, and Helen Woodward.; Production Anne and Irene Jeworski.

NEW MEMBERS OLD MEMBERS

Good as our lectures and field trips are you can enlarge your knowledge of geology by attending classes in the evening at the University of Minnesota. Besides Physical and Historical Geology Geology in Minnesota State Parks Geology in Minnesota and Overview of Geology are also offered. Call 376-3000 to request a copy of the Extension Bulletin.



"That jaw bone fossil is one million and eight years old."

"How can its age be measured so closely?"

"Well, it was a million years old when I started working here, and I've been at the museum for eight years!"

EVER GOD

P7

We raced the hills, the wind and I
Leaping the barriers of time

Forests entoned low psalmal chants
Of age old mysteries sublime

Rocks resounded with lilting ode
Of beauty held in flowing rhyme

Waters chided with angry roar
Of tragedy in every clime

Thunder flung riling epithet
Of bloody hatred, war and crime

But ever in his ruffled wing
Wind carried God.



π Helen deLong Woodward

SOME REMARKS ABOUT THE FUNCTIONING OF POTASH AS A TRANSPORTATION AGENT (OF PLANT NUTRIENTS).

In plant physiology one of the important functions of potash (K-20) is to facilitate the transportation of plant nutrients from roots upward.

As an easy experiment (preferably with maturing corn-Zea mays) is conducted as follows:-Using a container about the size of a 3 lb. coffee tin fill about 3/4 full with water, add a smidgeon of methylene blue; it is remarkable how little will color so much water. You will have had to plate two corn plants, one in exuberant health, the other potash starved as indicated by certain yellowish streaks in the leaves. Pound a stake about corn high into the ground cut the corn stalks off at a level just above brace roots, place in coffee can and secure by tying to the upright stake. Let corn stalks remain (say over night) next carefully slice the stalk the whole length as close to the center as possible. Tie each half to a narrow stick, or using the tallest of all grasses, bamboo, and the results become apparent:-In the healthy corn the blue should extend up to the tip of the stalk. The sickly stalk could not convey the blue very high, and the blue would probably be deposited mostly at the first node; but not much higher. NOTE: Nitrate deficiency indicated by pale green leaves, phosphate deficiency by leaves with purplish edges, K 0 by yellow streaks.



GEOLOGICAL SOCIETY OF MINNESOTA

1981 - 1982 Public Lecture Series

170 Physics Building, University of Minnesota

7:30 P.M., Monday Evenings

September 28

ANNUAL MEETING 7:00 p.m. Smorgasbord Dinner 5:30-6:45
Viking Village, 27th and Lake Street, Minneapolis

ORIGINS AND DISCOVERIES

Dr. Calvin Alexander, Dept. of Geology and Geophysics, Univ. of Minn.

October 12

HOW IT ALL BEGAN -- Stellar Evolution, Nucleosynthesis,
Condensation of the Solar Nebula

October 26

VOYAGER I AND II DISCOVERIES -- A Space Probe Update

November 9

THE EARTH AS A PLANET IN THE SOLAR SYSTEM

LUNAR GEOLOGY AND EARTH

Dr. Paul Weiblen, Dept. of Geology and Geophysics, Univ. of Minn.

November 23

GEOLOGY OF THE MOON

December 7

SIGNIFICANCE OF GEOLOGIC DIFFERENCES BETWEEN THE MOON
AND THE EARTH

EARTH: A DYNAMIC PLANET

Dr. Clement Chase, Dept. of Geology and Geophysics, Univ. of Minn.

January 11

FORMATION OF THE EARTH -- The First 500 Million Years

January 25

LAYERING IN THE EARTH -- Where and When

February 8

WHY ARE CONVECTION AND PLATE TECTONICS NECESSARY

DEVELOPMENT OF THE EARTH -- PRECAMBRIAN CRUSTAL EVOLUTION WITH RESPECT TO MINNESOTA AND THE LAKE SUPERIOR REGION

Dr. G.B. Morey, Associate Director, Minnesota Geological Survey

February 22

WHAT IS PRECAMBRIAN GEOLOGY -- Concepts, Subdivisions,
the Evolution of the Precambrian Time Scale

March 1

CRUSTAL EVOLUTION IN THE LAKE SUPERIOR REGION -- 3600
Million Years to 2500 Million Years B.P. (before the present)

*

WORKSHOP* Saturday, Date and place to be announced

March 22

CRUSTAL EVOLUTION IN THE LAKE SUPERIOR REGION --
2500 Million Years to 1800 Million Years B.P.

April 5

CRUSTAL EVOLUTION IN THE LAKE SUPERIOR REGION --
1800 Million Years to 570 Million Years B.P.

April 26

SPRING BANQUET